

PATENT ABSTRACTS OF JAPAN

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(54) MANUFACTURING METHOD OF COLOR TRANSFER SHEET

(57)Abstract:

PROBLEM TO BE SOLVED: To manufacture a color transfer sheet capable of effecting transfer print of a letter, a photograph, a pattern or the like, which is described by a copying machine for business, a printer for a personal computer or paint for picture, simply on various materials.

SOLUTION: A colored image is formed on the surface of a synthetic resin layer of a paper for transfer and a re-separating type adhesive film is superposed on the surface of the image to bond by pressure, then, water is impregnated into water-soluble paste from the side of the paper substrate of the transfer paper. Thereafter, the paper substrate is separated whereby the color transfer sheet can be obtained.

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TRANSLATION

[Japanese Patent Laid-open No. 2001-239799]

What is claimed is:

1. A method for manufacturing a color transfer sheet, wherein a transfer paper (1) formed by successively laminating a water-soluble paste (3), an adhesive layer (4), and a synthetic resin layer (5) on a surface of a paper substrate sheet composed of paper and such materials (2) is provided, the method being characterized by comprising:

forming a color image (6) on a surface of the synthetic resin layer (5) of the transfer paper (1);

after the foregoing step, superimposing a removable pressure-sensitive adhesive (8) of a removable pressure-sensitive adhesive film (7) on the surface of the color image (6), and bonding them together by applying pressure;

impregnating the water-soluble paste (3) with water from the paper substrate (2) side; and

then releasing the paper substrate sheet (2).

. . .

[0002]

Conventionally, hot meltable adhesives (hotmelts) that do not generate adhesiveness at normal temperatures have been employed as transfer adhesives in transfer paper, because when paper is passed through a copying machine it touches internal parts of the machine. Therefore, a hot press was essential to reactivate the adhesive agent when transferring an image onto a receiving material. The market demanded a simple and convenient transfer sheet that could transfer an image simply by rubbing without using any special machine. This invention aims to achieve this objective by improving the above-mentioned conventional method for manufacturing the transfer paper.

[0003]

[Problems to be Solved by the Invention]

One method to solve the disadvantage of the prior art is to use a pressure-sensitive adhesive, whereby an image can be adhered to various materials by applying a pressure at the normal temperature.

. . .

[0004]

[Means for Solving the Problem]

In order to achieve the above objective, transfer paper formed by successively laminating a water-soluble paste, an adhesive layer, and a synthetic resin layer on a surface of a paper substrate is provided in the production method for a color transfer sheet of the present invention. On the surface of the transfer paper, a color image reproduced by an electrostatic dry copying machine, a color image produced by a laser printer or a hot-fusing printer for PCs, or an image drawn with paints mainly consisting of synthetic resin such as acrylic paints is formed. On the surface of the image, an adhesive film having a removable adhesive layer is superimposed, and they are bonded together by applying pressure, then the paper substrate and water-soluble paste is impregnated with water, the water-soluble paste is melted, and the image is transferred from an adhesive layer to the removable pressure-sensitive adhesive film side by releasing the paper substrate.

[0005]

... A synthetic rubber-based pressure-sensitive adhesive is suited for the pressure-sensitive adhesive. This is because a synthetic rubber-based pressure-sensitive adhesive has low resistance to solvent, and when removing the adhesive layer other than the image part, with the color image acting as a masking film (resist film), it can be melted easily with an organic solvent having a low solubility that does not melt the color image, and thus it has advantages in terms of operability, health, and safety.

. . .

[0008]

[Embodiments]

Next, preferred embodiments of the present invention will be explained with reference to the attached drawings. FIG.1(i) shows a transfer paper (1) that is configured by successively laminating a water-soluble paste (3) and an adhesive layer (4) on the surface of a paper substrate sheet (2), and a synthetic resin layer (5) on the surface (of the transfer paper). As shown in FIG.1(ii), a color image (6) is formed on the surface of the transfer paper (1) by reproduction using an electrostatic dry copying machine. Thereafter, as shown in FIG. (iii), a removable pressure-sensitive adhesive film (7) is superimposed on and pressed against the surface side of the color image (4) [sic. the color image (6)]. A removable pressure-sensitive adhesive (8) is applied in the figure below¹ of the removable pressure-sensitive adhesive film (7), and a pressure-sensitive film substrate (9) is superimposed thereupon. Then, as shown in FIG.1(iv), a color transfer sheet (10) shown in Fig. 1(v) is obtained by impregnating the water-soluble paste (3) with water from the paper substrate (2) side and releasing the paper substrate (2). Next, to explain how the color transfer sheet (10) is used for transferring (images), after the color transfer sheet (10) is superimposed on and pressed against whichever of various kinds of receiving materials (12) as shown in FIG.1(vi), the color image (6) is separated from the removable pressure-sensitive adhesive (8) of the removable pressure-sensitive adhesive film (7) as shown in FIG.1(vii), producing a color image (6) on the surface of the receiving material (12).

[0009]

Next, the embodiment shown in FIG.2 will be explained. In a state where a color image (6) is formed on the surface of a transfer sheet (1) as shown in FIG.2(a), an organic solvent (13) that does not melt the color image (6) is applied and wiped off as shown in FIG.2(b), thereby removing the non-image part of the adhesive layer (4) and synthetic resin layer (5). Then, as shown in FIG.2(c), a removable pressure-sensitive adhesive (8) of a removable pressure-sensitive adhesive film (7) is superimposed on and pressed against the surface of the color image (6). Next, as shown in FIG.2(d), the water-soluble paste (3) is impregnated with water from the paper substrate (2) side. Thereafter, as shown in FIG.2(e), a color transfer sheet (11) is formed by releasing the paper substrate (2). As for the use, the color transfer sheet is used following similar processes as explained in FIG1(vi) and FIG1(vii).

¹ Translator's note: Probably should be "to the underside."